



Office of **SOIL & WATER
CONSERVATION**

MIKE STRAIN, DVM
Commissioner

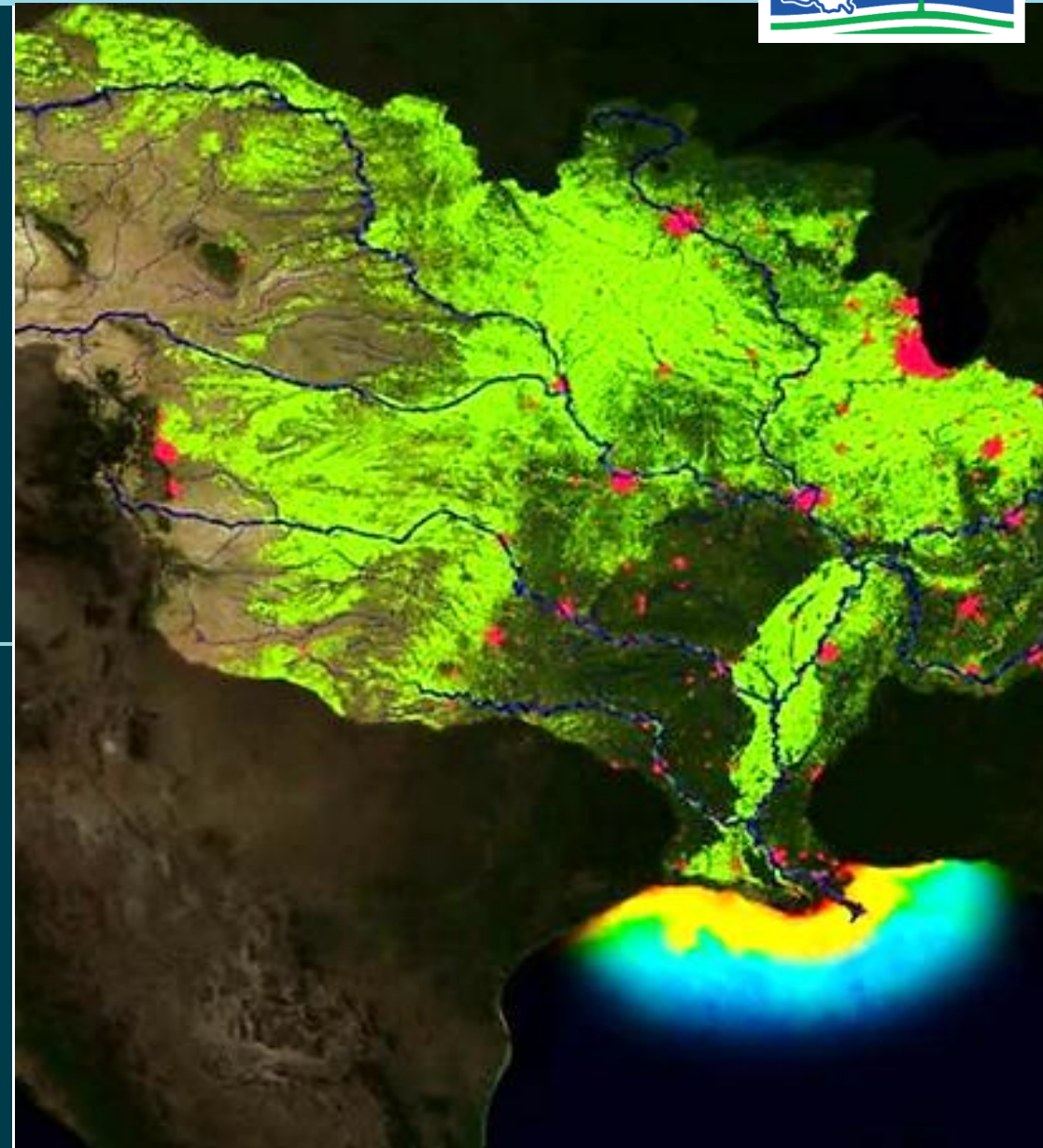
LDAF.LA.GOV



Office of
**SOIL & WATER
CONSERVATION**

Gulf Hypoxia – Louisiana's Reduction Efforts

Jerry Davenport & Amelia Day



Introduction & Agenda

- What is Hypoxia?
- What Causes Hypoxia?
- Which BMPs can be utilized for reduction?
- Current Projects – EPA Section 319 & the Hypoxia Task Force
- Final Remarks & Takeaways



What is Hypoxia?

- Hypoxia is an environmental phenomena, especially within watershed drainage systems, used to describe low or depleted oxygen in a water body
- Low dissolved oxygen concentrations can reduce and/or alter fish and aquatic wildlife populations
 - i.e., survival and reproduction rates
- The Gulf's hypoxic zone varies annually, depending on factors such as rainfall in the Mississippi River watersheds and tropical storms/hurricanes in the Gulf. Though there are variations, the zone has an average size ~5,000 square miles per year

What Causes Hypoxia?

Temperature and Physical Factors

- High Water Temperature
- Lack of Movement
- Altitude and Salinity
- Stratification

Biological and Chemical Factors

- Decaying Organic Matter
- Algal Blooms
- Respiration
- Chemical Oxidation

Anthropogenic Factors

- Eutrophication
 - Agricultural Runoff
 - Fossil-fuel Burning
 - Wastewater Treatment Effluent

Which BMPs can be utilized?

Avoidance & In-Field Management

- Nutrient Management Plan (104)
- Soil Testing (216)
- Conservation Cover (327)
- Conservation Crop Rotation (328)
- Residue and Tillage Management – No Till/Strip-Till (329)
- Cover Crops (340)
- Critical Area Planting (342)

- Residue and Tillage Management – Reduced Till (345)
- Nutrient Management (590)

Edge-of Field Practices

- Field Border (386)
- Filter Strip (393)
- Grade Stabilization Structure (410)

These conservation practices are designed to trap, filter, or prevent the transport of nutrients from farm fields into waterways.

Current Projects – EPA 319



LEAU 0791: Lake Lafourche at Highway 133 (April 29, 2026)

Upper Bayou Lafourche



Lake St. Joseph



Louisiana 319 Projects

Nutrient Reduction in Upper Bayou Lafourche

Project Location: Morehouse Parish

Project Funding: Gulf of America
Alliance

Project Period: January 1, 2026 –
December 31, 2030

Project Lead: Morehouse Soil and Water
Conservation District

Project Partners: LDAF-OSWC; USDA-
NRCS; University of Louisiana Monroe
Toxicology

- No till drill (1,347.82 acres)
- Reduced till (713.2 acres)
- Nutrient Management (1,493.87 acres)
- Nitrogen Reduction (11,760 lbs.)
- Phosphorus Reduction (1,979 lbs.)
- Sediment Reduction (288 tons)

Nutrient Loading Reduction through the Gulf Hypoxia Program (GHP) in Lake St. Joseph

Project Location: Tensas Parish

Project Funding: United States
Environmental Protection Agency (EPA)

Project Period: October 1, 2022-
September 30, 2028

Project Lead: LDAF-OSWC

Project Partners: LDEQ; Tensas-
Concordia Soil and Water Conservation
District; USDA-NRCS; LSU AgCenter

- Cover Crops (6,660.63 acres)
- Conservation Crop Rotation (621.3 acres)
- Nutrient Management (4,514.8 acres)
- Residue Management and Reduced Tillage (3,267.2 acres)
- Nitrogen Reduction (76,209 lbs.)
- Phosphorus Reduction (14,062 lbs.)
- Sediment Reduction (2,769 tons)



Section 319 Nonpoint Source Management Program – FY25 Data

Project Location: Louisiana

Project Funding: United States
Environmental Protection Agency (EPA)

Project Period: Ongoing

Project Lead: LDAF- OSWC

Project Partners: USDA-NRCS; LDEQ;
Louisiana Soil and Water Conservation
Districts

- Conservation Crop Rotation (1,594.35 acres)
- Residue & Tillage Management (1,041.41 acres)
- Irrigation Land Leveling (1,524.58 acres)
- Irrigation Water Management (154.81 acres)
- Nutrient Management (3,845.94 acres)
- Pest Management (583.27 acres)
- Wetland Wildlife Habitat Management (209.80 acres)
- Conservation Cover (47.90 acres)
- Cover Crops (728.57 acres)
- Grade Stabilization Structure (119.83 acres)
- Irrigation Pipeline (13,034 ft)
- Nitrogen Reduction (28,310.02 lbs.)
- Phosphorus Reduction (7,814.05 lbs.)
- Sediment Reduction (970.41 tons)



Office of **SOIL & WATER
CONSERVATION**

MIKE STRAIN, DVM
Commissioner

THANK YOU

LDAF.LA.GOV